

GENERAL NOTES

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NEW RANGE EXTENSIONS, LARVAL HOSTPLANT RECORDS AND NATURAL HISTORY OBSERVATIONS OF CUBAN BUTTERFLIES

Additional key words: Euphorbiaceae, Fabaceae, Bignoniaceae, Acanthaceae, Rutaceae.

Although butterflies have not been thoroughly collected in Camagüey province, a checklist of the territory has been recently published as the result of field surveys and collections completed during the last ten years (Fernández & Rodríguez 1998). The latter complements the preliminary work of Guerra et al. (1993), who reported 76 butterflies and skippers. This updated and augmented list included 125 species, but their residency status has not been entirely determined within the province due to the paucity of information available for some of them. A few have only been collected or observed on one or two occasions due to the short collecting time available.

Here, I report range extensions for the nymphalid *Antillea pelops anacaona* (Herrich-Schäffer), the lycænid *Strymon acis casasi* (Comstock & Huntington) and the hesperiid *Achlyodes munroei* Bell, which represent new butterflies for the province. The associated larval hostplants for these species and for six other butterflies and biological, ecological and distributional data are also discussed. Voucher adult specimens of the three newly recorded species are deposited in the author's collection and a pair of *A. munroei* with associated pupal exuvia has been deposited in the collection of the Allyn Museum of Entomology, Florida Museum of Natural History.

These observations were made between May 1996 and November 2001 in the following localities in Camagüey province: Albaiza, Camagüey city, Central Cándido González, Limones, Loma de Yucatán and Santa Ana (south of the INIVIT Experimental Station). The fourth and the fifth sites were areas not previously sampled. Additional information was also obtained from other field trips at the southern slope of Sierra de Cubitas in 1988, 1994 and 1996.

NYMPHALIDAE

***Anaea cubana* (H. H. Druce).** One fifth and four fourth instar larvae were found in the leaves of *Croton sagraeanus* Muell. Arg. (Euphorbiaceae) at Limones in June. All were inside vertical tubular shelters, open at both ends, and formed by tying together various longitudinally interconnected leaves. The caterpillar always enters the upper and wider opening and backs into the tube (caudal end first) once it returns from

feeding. Once inside, the conspicuous head capsule remains exposed at the entrance. The fourth instar larvae were fed with the leaves of *Croton argenteus* L. instead of the original host. They accepted the new foodplant and completed development to the adult stage. On this plant, the larvae either lived exposed or tied the edges of an individual leaf for shelter. *Croton argenteus* was growing spontaneously along roadsides in the surroundings of the city of Camagüey. Pupation took place in the underside of the leaves of the host (in the field, a pupal exuvia was also found on the underside of a *C. sagraeanus* leaf) and lasted 9 (n = 2 males) and 10 (n = 2 females) days. The adults were not abundant at the collecting site but seen during all of the field visits, flying along hedgerows and roadsides and attracted to fallen, ripe mangoes.

According to Alayo and Hernández (1987), the larva of *A. cubana* was reared by Gundlach on *Pectis* (Asteraceae) species. As all other species of *Anaea* have been reported to be confined to Euphorbiaceae (Smith et al. 1994), this record on Asteraceae is likely a mistake.

***Hamadryas amphichloe diasia* (Fruhstorfer).** Two larvae were found on leaves of *Dalechampia scandens* L. (Euphorbiaceae) at Loma de Yucatán. There were not records of foodplants for this Antillean subspecies but Smith et al. (1994) mentioned that species of *Dalechampia* or *Tragia* were likely to serve as host.

***Antillea pelops anacaona* (Herrich-Schäffer).** Seven specimens of this endemic subspecies (five males and two females) were taken at Limones in June and September. These were found in humid, shady undergrowth beneath a mango tree in a wooded area. The individuals were perching on plants less than 1 m tall, with both wings slightly, partly or fully open (but not pressed against the leaves). Sometimes the butterflies flexed their wings at a rapid rate or were seen flying just above or between the low vegetation. At times, the flight may be slow and weak, but it can also be quite agile and difficult to follow. All these adult behaviors combined to make the butterfly inconspicuous supporting the observations made by Smith et al. (1994) that they may be overlooked unless present in numbers. A male nectaring on *Alternanthera axillaris* (Hornem.) D. Dietr. (Amaranthaceae) and a specimen

thermoregulating with wings partly open before mid-day were other behaviors observed for the butterfly.

Two fourth instar larvae were independently collected on *Blechnum pyramidatum* (Lam.) Urb. and *Justicia comata* (L.) Lam. (both Acanthaceae) in September. One of the larvae pupated and emerged as an adult male after six days. The butterfly appears to be resident, and on the last two visits to the area in September, I observed two fresh pairs. This tiny nymphalid was reported by Alayo & Hernández (1987) in Gran Piedra and Sardinero, Santiago de Cuba, in eastern Cuba; and Pinares de Viñales and Luis Lazo, Pinar del Río, to the west. They are always seen in small isolated groups. Fontenla (1987) also reported it from a wooded area of Parque Lenin, Ciudad de La Habana.

LYCAENIDAE

Strymon acis casasi (Comstock & Huntington).

Three adults and a last instar larva of this endemic subspecies were taken at Limones in May and June. The first specimen found was a rather worn female that perched on a low-growing plant of *Dichrostachys cinerea* Willd. (Fabaceae). It was collected just after an erratic and instantaneous flight along a path between dense groups of the exotic legume. The two other specimens, a badly worn female which was released and a fresh male, were collected on *C. sagraeanus* flowers. A larva was also collected in the same area as the adults and was reared on the *Croton* flowers until pupation. However, the adult did not emerge. Other lycaenids, including many male *Ministrymon azia* (Hewitson) and some *Strymon columella cybira* (Hewitson), *Leptotes cassius theonus* (Lucas), *Hemiargus lianno filenus* (Poey) and *Cyclargus a. ammon* (Lucas) were also present and nectaring on the *Croton* flowers. *S. acis casasi* was not seen commonly, and more visits to the locality will be required for further observations to determine the peak months of adult activities. Alayo and Hernández (1987) cited this subspecies as rare, being only collected around Guantánamo province or some other localities of the extreme eastern part of the island.

Strymon columella cybira (Hewitson). A last instar larva was found on *C. argenteus* flowers in Camagüey city. In Cuba, a wide range of foodplants is now known for this lycaenid, not only in the Malvaceae but also members in the Acanthaceae, Portulacaceae, Sterculiaceae and Surianaceae (Fernández 2001).

Leptotes cassius theonus (Lucas). Larvae were always found feeding on flowers. In Camagüey city, larvae were on *Albizia lebeck* (L.) Benth., *Calliandra surinamensis* Benth. and *Pithecellobium dulce* Benth. (Fabaceae). In Albaiza, larvae were on *Calopogonium mucunoides* Desv. (Fabaceae), and in Central Cándido

González, they were on *Clytostoma callistegioides* Bur. (Bignoniaceae), a plant family not previously recorded for the lycaenid. The hostplants for *L. cassius* are generally herbaceous legumes but Malpighiaceae and Plumbaginaceae are also used (Smith et al. 1994).

HESPERIIDAE

Proteides maysi (Lucas). Oviposition on the underside of a leaflet of *Andira inermis* (Wright) Kunth ex DC. (Fabaceae) was observed at Limones. After eclosion, the larva was reared on *Lonchocarpus dominguen-sis* (Turp. ex Pers.) DC. (Fabaceae) through the fifth instar but died due to excessive humidity in the rearing container. No previous life history information was available for this endemic Cuban skipper (Smith et al. 1994).

Burca concolor concolor (Herrich-Schäffer).

The larvae of different instars were commonly observed on *C. sagraeanus* leaves at Limones in May, June and September. They construct shelters by using interconnecting leaves or bending them inward and sealing the unions between margins, and using a tomentum present on the underside of leaves. Earlier instar larvae build a shelter on the ventral surface of a single leaf just using this tomentum and feed on leaf edges. Active feeding occurs only on the upper side (leaving the tomentum) which produces the effect of a chlorotic or scraped leaf. Later instar larvae cut out the leaf section where they have fed so damaged parts are not visible on the plant. Pupation takes place in the shelter and lasts 8–9 days ($n = 3$).

The adults were more numerous only in June. The males constantly patrolled around and between *Croton* stands at low or medium height from the ground. The females also joined males in this behavior with ovipositions in some cases; one female was also taken while perching with closed wings on a *Gliricidia sepium* (Jacq.) Kunth ex Walp. (Fabaceae) leaflet to a height of about 4 m. Individuals of both sexes were seen taking nectar with wings fully open on flowers of the hostplant, but males also visited *Koanophyllum villosum* (Sw.) R.M. King et H. Rub. (Asteraceae). Solitary males were observed sipping water at the edges of mud puddles. This skipper appears to be resident and fairly common at Limones.

In addition, several larvae were also found on *Croton organifolius* Lam. at Albaiza in August and November. Here, no adults of this species had been recorded during previous field studies but upon locating the immatures, a female was observed in the nearby hostplant patch at a latter date. This individual took nectar on *C. organifolius* and on *Bourreria microphylla* Griseb. (Boraginaceae), and later alighted with wings open on dry grasses on the ground, where its presence was inconspicuous.

Burca c. concolor was recorded for the first time in Camagüey in 1988 near Paso de los Paredones in the dry plains of the southern slope of Sierra de Cubitas hills where the species was seen along roadsides. In more recent years (1994 and 1996), it has also been found there again and seen at times in abundance. Individual specimens have been observed alighting on stones or low plants and nectaring on *Waltheria indica* L. (Sterculiaceae) flowers. In addition to the above mentioned localities, other specimens of this skipper have been also taken in a wooded tract around the lower part of Loma de Yucatán in June. Due to its general associations with grasses and open areas, this species is probably originating from the adjacent savannas.

This endemic subspecies is considered as very rare in Cuba (Alayo & Hernández 1987), recorded from pico Potrerillo, Escambray; Cuabales de Corral Nuevo, Matanzas; Tortuguilla, Guantánamo; playa Juraguá, Santiago de Cuba. Smith et al. (1994) have added playa Ancón, near Trinidad as another collecting site. The discovery of the foodplant association with *Croton* of this species will not only help to understand the significance of the local occurrence of the skipper but may perhaps encourage a wider search of this species in local foodplant patches.

***Achlyodes munroei* Bell.** Miller and Simon (1998) mentioned that apparently the last known specimens of *A. munroei* were collected over a half century ago by Pastor Alayo, despite continued diligent search for it in Cuba by Luis Roberto Hernández and others. Some lamented that this insect might be extinct. Although older *A. munroei* specimens were found in the coastal locality of Siboney, Santiago de Cuba (Smith et al. 1994), the area for the recently collected ones is an inland site, primarily a cattle pasture with many trees and low-growing bushes, including two *Zanthoxylum*. Here *A. mithridates papinianus* (Poey) is a more common inhabitant and found in various larval stages, which utilize all rutaceous trees available (including *Citrus*). This area remains abandoned for some periods that allows plant regrowth and formation of very suitable habitats, not only for resident butterflies but for temporary colonizers, such as *A. munroei*.

I found this species as larvae in leaf shelters of *Zanthoxylum martinicense* (Lam.) DC. (Rutaceae) in August at Santa Ana. A male was captured in November

2001, at the same site. Apart from the perching posture of the third collected specimen, with wings fully open and resting on leaves at about 40 cm high from the ground, no other distinct behaviors were seen.

Until very recently, *A. munroei* was considered to be an endemic Cuban species, but it has subsequently been found on Cat Island, Bahamas. Recent collections there suggest that the insect is well established and will probably be recorded on other Great Bahama Bank islands in the future (Miller & Simon 1998). The discovery of the species in Camagüey not only confirms that *A. munroei* still exists in Cuba, but it may well prove to be also more widely distributed as further field studies are conducted by resident entomologists.

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DOUGLAS MANUEL FERNÁNDEZ HERNÁNDEZ,
Apartado Postal 83, Camagüey 1, C.P. 70100, Cuba,
email: douglasm@medscape.com

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